

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
United States Patent and Trademark
Office
Box PCT
Washington, D.C.20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 23 October 2000 (23.10.00)	Applicant's or agent's file reference PG3671/PCT
International application No. PCT/EP00/01446	Priority date (day/month/year) 12 March 1999 (12.03.99)
International filing date (day/month/year) 23 February 2000 (23.02.00)	
Applicant JONES, Anthony, Patrick et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
14 August 2000 (14.08.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer R. E. Stoffel</p> <p>Telephone No.: (41-22) 338.83.38</p>
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PATENT COOPERATION TREATY

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REC'D 03 JUL 2001

WIPO

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference PG3671/PCT	<div style="display: flex; justify-content: space-between;"> <div>FOR FURTHER ACTION</div> <div>See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)</div> </div>	
International application No. PCT/EP00/01446	International filing date (day/month/year) 23/02/2000	Priority date (day/month/year) 12/03/1999
International Patent Classification (IPC) or national classification and IPC B65D83/54		
Applicant GLAXO GROUP LIMITED		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 14/08/2000	Date of completion of this report 29.06.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Felgenhauer, H-P Telephone No. +49 89 2399 2618



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP00/01446

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-24 as originally filed

Claims, No.:

17-63 as originally filed

1-16 as received on 13/06/2001 with letter of 11/06/2001

Drawings, sheets:

1/14-14/14 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: . , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP00/01446

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-63
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-63
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-63
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Item V

1. The following documents are referred to
D1...US-A-4 061 251
D2...FR-A-2 140 341
2. The claims are not clear (Article 6 PCT) as indicated in item VIII.
- 3.1 The subject-matter of a claim 1 clarified as indicated in item VIII clearly defining the structure of the inlet and of the outlet valve, their independency of (a valve of) the aerosol container and their independency of operation is novel (Article 33 (2) PCT) in view of the documents cited in the International Search Report and not suggested by D1, which is considered as disclosing the closest prior art. According to D1 (cf. figures 2-4) the operation of the outlet valve of a metering valve is not independant of the operation of the inlet valve. Hence contrary to a feature of claim 1 "dispensing of the aerosol without requiring movement of any other dispensing member relative to the valve body" is not possible.

According to D2 instead of an "outlet valve mover for moving the outlet valve poppet out of contact with the valve seat" the metering chamber is provided as having a varying volume, wherein during decrease of its volume via a piston element the outlet valve poppet is moved out of contact with the outlet valve seat by means of pressure of the aerosol to be dispensed.

Since the remaining documents cited in the International Search Report do not come closer the subject-matter of claim 1 should satisfy the requirements of Article 33 (2) and (3) PCT.

- 3.2 This applies correspondingly with respect to dependent claims 2 - 25, to claims 26 - 31 being directed to an aerosol container comprising a metreing valve according to claims 1 - 25 and to claims 32-63 being directed to an inhalation device comprising a metering valve according to claims 1-25 and the use of such an inhalation device.

Item VII

- 1.1 The independent claims have not been cast in the two-part form (Rule 6.3 b) PCT).
- 1.3 Reference signs in parentheses should have been inserted in the claims to increase their intelligibility, Rule 6.2(b) PCT. This applies to both the preamble and characterising portion.
- 1.4 The description has not been brought into conformity with the amended claims.
- 1.5 To meet the requirements of Rule 5.1(a)(ii) PCT, the documents D1 and D2 should have been identified in the description and the relevant background art disclosed therein should have been briefly discussed.
- 1.6 No publication number is given for the document referred to on page 8, lines 10, 11.

Item VIII

1. Claim 1 is not clear (Article 6 PCT) for the following reasons:
 - 1.1 The feature relating to the metering valve being at rest: "the outlet valve being closed when the metering valve is at rest" is, as the corresponding feature of claim 3: "the inlet valve is closed when the metering valve is at rest", a feature defining an operational modus of the metering valve concerned but not one defining the structure of a metering valve as required.
 - 1.2 The last feature of claim 1: "thereby enabling dispensing ..." relates to the use of the metering valve but fails to contribute to the definition of the structure of the metering valve as would have been required.
 - 1.3 The additional feature of claim 2 is, in view of the problem to be solved (cf. e.g. page 2, lines 25 - 29), a feature essential to define the structure of the inlet valve which otherwise remains undefined within claim 1.

- 1.4 For the effect according to the last feature of claim 1: "thereby enabling dispensing ..." it is necessary that inlet and outlet valve are independently operable. Consequently claim 1 lacks the additional feature of claim 4 as an essential feature.
- 1.5 Within claim 1 it is only - in view of a possible use of the metering valve as the metering valve of an aerosol container - referred to the metering valve of an aerosol container. Claim 1 thus lacks a definition (by means of structural features) of the cooperation of the metering valve and a container.

This holds true in particular in view of the problem to be solved (cf. page 2, lines 25 - 29) since according to claim 1 it remains undefined whether or not elements of the metering valve, in particular e.g. the inlet valve, form - besides belonging to the metering valve - also part of the aerosol container.

- 1.6 For completeness sake it shall be indicated that the first feature of claim 1 concerning an intended use of a metering valve: "...for use as the metering valve of an aerosol container ..." is, since claim 1 is directed to an apparatus (metering valve), no feature defining the structure of the metering valve and thus limiting the subject-matter of claim 1.
2. Claim 1 does not satisfy the requirement of Article 6 PCT (claims fully supported by the description) since it does not comprise the elementary structural features of claim 2 and since no other structure of the inlet valve is disclosed in the application.
3. The general remarks within the description, page 24, lines 25 - 34 are unclear and can lead to an ambiguity with respect to the extent of the subject-matter defined by the claims.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PG3671/PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 00/ 01446	International filing date (day/month/year) 23/02/2000	(Earliest) Priority Date (day/month/year) 12/03/1999
Applicant GLAXO GROUP LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 09 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☒ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

AEROSOL METERING VALVE

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.

1



None of the figures.

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

As a result of the prior review under R. 40.2(e) PCT,
part of the additional fees are to be refunded.

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☒ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9 21-31

A metering valve for an aerosol comprising a metering chamber having inlet and outlet valves whereby the chamber outlet valve is held in biased contact with its seat when in the closed position.

2. Claims: 10-17

Electrical, magnetic or electro-magnetic device to operate a valve.

3. Claim : 18

Pneumatic device to operate a valve.

4. Claim : 19 20

Hydraulic device to operate a valve.

5. Claims: 32-63

Medicament dispenser comprising an aerosol and a housing whereby a trigger device acts to open a valve in order to allow medicament to be dispensed.

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The deficiencies under Rule 8.1(d) are rectified as follows:

ln.2 :...body (10)...chamber (12)...inlet (20)...

ln.3 :...outlet (30)...

ln.8 :...seat (32)...poppet (34)...

INTERNATIONAL SEARCH REPORT

International Application No

EP 00/01446

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 B65D83/54 A61M15/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 B65D A61M F16K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 061 251 A (HARRIS) 6 December 1977 (1977-12-06)	1-3, 5, 7, 9, 21, 22, 24, 26, 27
Y	column 2, line 4 -column 4, line 5	4, 25, 28-31
X	GB 957 294 A (HAARKOSMETIK UND PAEFUMERIEN)	1, 2, 6-9, 23, 24, 26
Y	the whole document	10, 16-18, 32, 34, 35, 37, 40, 41, 47, 48, 63

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

12 February 2001

Date of mailing of the international search report

09. 03. 2001

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Authorized officer

Newell, P

INTERNATIONAL SEARCH REPORT

International Application No

EP 00/01446

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 730 219 A (S.I.R.P.) 9 August 1996 (1996-08-09) page 10, line 2 -page 15, column 3; figures 1,2 ---	1,7,9, 21,24,26
Y	FR 2 140 341 A (RAMIS) 19 January 1973 (1973-01-19) page 2, line 36 -page 3, line 9; figures 4,5 ---	4,25
Y	WO 96 32345 A (GLAXO WELLCOME) 17 October 1996 (1996-10-17) page 3, line 7 -page 5, line 14 ---	28-30
Y	WO 96 32344 A (GLAXO) 17 October 1996 (1996-10-17) page 1, line 11 - line 28 ---	31
Y	US 3 848 775 A (POSSELL) 19 November 1974 (1974-11-19) column 3, line 9 -column 5, line 58; figures ---	10,16,17
A	US 3 666 144 A (WINDER) 30 May 1972 (1972-05-30) column 2, line 1 -column 3, line 64; figure 2 ---	56-59
A	US 3 974 941 A (METTLER) 17 August 1976 (1976-08-17) abstract ---	10
A	US 5 353 828 A (TROSCINSKI) 11 October 1994 (1994-10-11) column 3, line 3 - line 44; figures ---	11-13,51
A	US 5 263 643 A (WELLS) 23 November 1993 (1993-11-23) column 6, line 65 -column 7, line 8; figure 9 ---	11-13, 51-53
A	GB 2 085 553 A (MIYAWAKI STEAM TRAP) 28 April 1982 (1982-04-28) the whole document ---	11-13, 51-53
A	US 3 835 659 A (MCBRIDE) 17 September 1974 (1974-09-17) column 2, line 11 -column 3, line 53; figures ---	11,12, 14,15, 51,52,54
A,P	WO 99 15820 A (INSTITUT FUR MIKROTECHNIK) 1 April 1999 (1999-04-01) page 7, line 18 -page 9, line 28 ---	14
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INTERNATIONAL SEARCH REPORT

International Application No

EP 00/01446

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 608 647 A (RUBSAMEN) 4 March 1997 (1997-03-04) claim 1 ---	18
Y	US 5 520 166 A (RITSON) 28 May 1996 (1996-05-28) ---	32, 34, 35, 37, 40, 41, 47, 48, 63
A	column 1, line 25 - line 48; claim 1 column 3, line 64 - column 4, line 13 column 5, line 47 - line 54 column 10, line 19 - column 14, line 41; figures 1-4 ---	18, 42, 43, 49, 60
A	US 3 929 282 A (DOLL) 30 December 1975 (1975-12-30) the whole document ---	19, 20, 61, 62
A	US 3 402 861 A (COTES) 24 September 1968 (1968-09-24) the whole document ---	33, 49, 50
A	WO 92 12750 A (VORTAN) 6 August 1992 (1992-08-06) abstract ---	36
A	US 5 655 523 A (HODSON) 12 August 1997 (1997-08-12) cited in the application the whole document ---	38, 39
A	US 4 581 942 A (OGURA) 15 April 1986 (1986-04-15) column 1, line 10 - line 18; claim 1 ---	44
A	US 5 873 361 A (HAKALA) 23 February 1999 (1999-02-23) column 2, line 36 - line 59 ---	44
A	EP 0 536 978 A (FISHER & PAYKEL) 14 April 1993 (1993-04-14) claims -----	42, 43

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

EP 00/01446

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4061251	A	06-12-1977	NONE	
GB 957294	A		CH 407895 A DE 1256979 B FR 1360442 A NL 129592 C NL 292023 A	15-02-1966 20-08-1964
FR 2730219	A	09-08-1996	NONE	
FR 2140341	A	19-01-1973	NONE	
WO 9632345	A	17-10-1996	AP 835 A AU 718851 B AU 5481296 A BG 102023 A BR 9604979 A CA 2218179 A CN 1186473 A CZ 9703261 A EP 0820414 A HU 9800641 A JP 2000513237 T NO 974738 A NZ 306281 A PL 322781 A SK 139197 A US 6149892 A	12-05-2000 20-04-2000 30-10-1996 31-07-1998 09-06-1998 17-10-1996 01-07-1998 16-06-1999 28-01-1998 28-08-1998 10-10-2000 11-12-1997 29-07-1999 16-02-1998 08-04-1998 21-11-2000
WO 9632344	A	17-10-1996	AT 186273 T AU 709006 B AU 5500696 A BR 9604916 A CA 2217949 A CN 1186474 A CZ 9703212 A DE 69605028 D DE 69605028 T EP 0820415 A ES 2139350 T HU 9801701 A JP 11503362 T NO 974707 A NZ 306449 A PL 322746 A US 6032836 A	15-11-1999 19-08-1999 30-10-1996 15-06-1999 17-10-1996 01-07-1998 16-06-1999 09-12-1999 20-04-2000 28-01-1998 01-02-2000 28-10-1998 26-03-1999 10-12-1997 25-11-1998 16-02-1998 07-03-2000
US 3848775	A	19-11-1974	NONE	
US 3666144	A	30-05-1972	AU 456469 B AU 3675171 A CA 940888 A DE 2161032 A FR 2117658 A IT 945375 B JP 54010727 B	19-12-1974 14-06-1973 29-01-1974 15-06-1972 21-07-1972 10-05-1973 09-05-1979
US 3974941	A	17-08-1976	NONE	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

EP 00/01446

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5353828	A	11-10-1994	NONE	
US 5263643	A	23-11-1993	EP 0604357 A JP 6221454 A	29-06-1994 09-08-1994
GB 2085553	A	28-04-1982	NONE	
US 3835659	A	17-09-1974	NONE	
WO 9915820	A	01-04-1999	DE 19741816 C	17-02-2000
US 5608647	A	04-03-1997	US 5450336 A US 5404871 A US 5743252 A AU 6130594 A EP 0683890 A JP 8509545 T WO 9417370 A AT 188617 T CA 2082168 C DE 69230546 D DE 69230546 T DK 529053 T EP 0529053 A ES 2141104 T JP 9164205 A JP 2613347 B US 5394866 A US 5469750 A US 5392768 A WO 9215353 A US 5522378 A US 5542410 A US 5622162 A US 5497764 A US 5520166 A US 5655516 A US 5755218 A US 5813397 A US 5826570 A	12-09-1995 11-04-1995 28-04-1998 15-08-1994 29-11-1995 08-10-1996 04-08-1994 15-01-2000 26-03-1996 17-02-2000 21-06-2000 19-06-2000 03-03-1993 16-03-2000 24-06-1997 28-05-1997 07-03-1995 28-11-1995 28-02-1995 17-09-1992 04-06-1996 06-08-1996 22-04-1997 12-03-1996 28-05-1996 12-08-1997 26-05-1998 29-09-1998 27-10-1998
US 5520166	A	28-05-1996	US 5497764 A US 5404871 A AT 188617 T CA 2082168 C DE 69230546 D DE 69230546 T DK 529053 T EP 0529053 A ES 2141104 T JP 9164205 A JP 2613347 B US 5394866 A US 5469750 A US 5450336 A US 5392768 A WO 9215353 A US 5522378 A	12-03-1996 11-04-1995 15-01-2000 26-03-1996 17-02-2000 21-06-2000 19-06-2000 03-03-1993 16-03-2000 24-06-1997 28-05-1997 07-03-1995 28-11-1995 12-09-1995 28-02-1995 17-09-1992 04-06-1996

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/01446

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5520166 A		US 5542410 A	06-08-1996
		US 5622162 A	22-04-1997
		US 5608647 A	04-03-1997
		US 5655516 A	12-08-1997
		US 5743252 A	28-04-1998
		US 5755218 A	26-05-1998
		US 5813397 A	29-09-1998
		US 5826570 A	27-10-1998
US 3929282 A	30-12-1975	CH 574578 A	15-04-1976
		CH 572181 A	30-01-1976
		DE 2403000 A	08-08-1974
		DE 2403132 A	08-08-1974
		FR 2216010 A	30-08-1974
		FR 2216499 A	26-11-1976
US 3402861 A	24-09-1968	NONE	
WO 9212750 A	06-08-1992	US 5322057 A	21-06-1994
		AU 1342092 A	27-08-1992
		CA 2099665 A	25-07-1992
		EP 0568648 A	10-11-1993
		JP 6505184 T	16-06-1994
US 5655523 A	12-08-1997	US 6012454 A	11-01-2000
		DE 69027319 D	11-07-1996
		DE 69027319 T	21-11-1996
		EP 0470154 A	12-02-1992
		AT 138814 T	15-06-1996
		AU 643435 B	18-11-1993
		AU 5539590 A	29-11-1990
		AU 644790 B	23-12-1993
		AU 5558890 A	29-11-1990
		CA 2050298 A	29-10-1990
		CA 2058764 A	29-10-1990
		DE 69027679 D	08-08-1996
		DE 69027679 T	14-11-1996
		DK 470154 T	21-10-1996
		DK 472598 T	29-07-1996
		EP 0472598 A	04-03-1992
		EP 0705614 A	10-04-1996
		ES 2087911 T	01-08-1996
		ES 2091825 T	16-11-1996
		WO 9013327 A	15-11-1990
		HK 1006546 A	05-03-1999
		JP 5501505 T	25-03-1993
		JP 4504671 T	20-08-1992
		KR 178798 B	01-04-1999
		NZ 233486 A	26-05-1995
		NZ 248275 A	26-05-1995
		WO 9013328 A	15-11-1990
		US 5619984 A	15-04-1997
		US 5740793 A	21-04-1998
US 4581942 A	15-04-1986	JP 60117131 A	24-06-1985
		DE 3476451 D	02-03-1989
		EP 0145384 A	19-06-1985

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/01446

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5873361	A	23-02-1999	FI	96579 B	15-04-1996
<hr/>					
EP 536978	A	14-04-1993	AU	2631692 A	22-04-1993
			JP	5209827 A	20-08-1993
			US	5468961 A	21-11-1995
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 00/01446

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

As a result of the prior review under R. 40.2(e) PCT,
part of the additional fees are to be refunded.

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☒ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9 21-31

A metering valve for an aerosol comprising a metering chamber having inlet and outlet valves whereby the chamber outlet valve is held in biased contact with its seat when in the closed position.

2. Claims: 10-17

Electrical, magnetic or electro-magnetic device to operate a valve.

3. Claim : 18

Pneumatic device to operate a valve.

4. Claim : 19 20

Hydraulic device to operate a valve.

5. Claims: 32-63

Medicament dispenser comprising an aerosol and a housing whereby a trigger device acts to open a valve in order to allow medicament to be dispensed.

INTERNATIONAL SEARCH REPORT

Information on patent family members

In. Application No

PCT/EP 00/01446

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4061251	A	06-12-1977	NONE	
<hr/>				
GB 957294	A		CH 407895 A	15-02-1966
			DE 1256979 B	
			FR 1360442 A	20-08-1964
			NL 129592 C	
			NL 292023 A	
<hr/>				
FR 2730219	A	09-08-1996	NONE	
<hr/>				
FR 2140341	A	19-01-1973	NONE	
<hr/>				
WO 9632345	A	17-10-1996	AP 835 A	12-05-2000
			AU 718851 B	20-04-2000
			AU 5481296 A	30-10-1996
			BG 102023 A	31-07-1998
			BR 9604979 A	09-06-1998
			CA 2218179 A	17-10-1996
			CN 1186473 A	01-07-1998
			CZ 9703261 A	16-06-1999
			EP 0820414 A	28-01-1998
			HU 9800641 A	28-08-1998
			JP 2000513237 T	10-10-2000
			NO 974738 A	11-12-1997
			NZ 306281 A	29-07-1999
			PL 322781 A	16-02-1998
			SK 139197 A	08-04-1998
			US 6149892 A	21-11-2000
<hr/>				
WO 9632344	A	17-10-1996	AT 186273 T	15-11-1999
			AU 709006 B	19-08-1999
			AU 5500696 A	30-10-1996
			BR 9604916 A	15-06-1999
			CA 2217949 A	17-10-1996
			CN 1186474 A	01-07-1998
			CZ 9703212 A	16-06-1999
			DE 69605028 D	09-12-1999
			DE 69605028 T	20-04-2000
			EP 0820415 A	28-01-1998
			ES 2139350 T	01-02-2000
			HU 9801701 A	28-10-1998
			JP 11503362 T	26-03-1999
			NO 974707 A	10-12-1997
			NZ 306449 A	25-11-1998
			PL 322746 A	16-02-1998
			US 6032836 A	07-03-2000
<hr/>				
US 3848775	A	19-11-1974	NONE	
<hr/>				
US 3666144	A	30-05-1972	AU 456469 B	19-12-1974
			AU 3675171 A	14-06-1973
			CA 940888 A	29-01-1974
			DE 2161032 A	15-06-1972
			FR 2117658 A	21-07-1972
			IT 945375 B	10-05-1973
			JP 54010727 B	09-05-1979
<hr/>				
US 3974941	A	17-08-1976	NONE	

INTERNATIONAL SEARCH REPORT

Information on patent family members

In International Application No

PCT/EP 00/01446

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5353828 A	11-10-1994	NONE	
US 5263643 A	23-11-1993	EP 0604357 A JP 6221454 A	29-06-1994 09-08-1994
GB 2085553 A	28-04-1982	NONE	
US 3835659 A	17-09-1974	NONE	
WO 9915820 A	01-04-1999	DE 19741816 C	17-02-2000
US 5608647 A	04-03-1997	US 5450336 A US 5404871 A US 5743252 A AU 6130594 A EP 0683890 A JP 8509545 T WO 9417370 A AT 188617 T CA 2082168 C DE 69230546 D DE 69230546 T DK 529053 T EP 0529053 A ES 2141104 T JP 9164205 A JP 2613347 B US 5394866 A US 5469750 A US 5392768 A WO 9215353 A US 5522378 A US 5542410 A US 5622162 A US 5497764 A US 5520166 A US 5655516 A US 5755218 A US 5813397 A US 5826570 A	12-09-1995 11-04-1995 28-04-1998 15-08-1994 29-11-1995 08-10-1996 04-08-1994 15-01-2000 26-03-1996 17-02-2000 21-06-2000 19-06-2000 03-03-1993 16-03-2000 24-06-1997 28-05-1997 07-03-1995 28-11-1995 28-02-1995 17-09-1992 04-06-1996 06-08-1996 22-04-1997 12-03-1996 28-05-1996 12-08-1997 26-05-1998 29-09-1998 27-10-1998
US 5520166 A	28-05-1996	US 5497764 A US 5404871 A AT 188617 T CA 2082168 C DE 69230546 D DE 69230546 T DK 529053 T EP 0529053 A ES 2141104 T JP 9164205 A JP 2613347 B US 5394866 A US 5469750 A US 5450336 A US 5392768 A WO 9215353 A US 5522378 A	12-03-1996 11-04-1995 15-01-2000 26-03-1996 17-02-2000 21-06-2000 19-06-2000 03-03-1993 16-03-2000 24-06-1997 28-05-1997 07-03-1995 28-11-1995 12-09-1995 28-02-1995 17-09-1992 04-06-1996

INTERNATIONAL SEARCH REPORT

Information on patent family members

In Application No

PCT/EP 00/01446

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5520166 A		US 5542410 A	06-08-1996
		US 5622162 A	22-04-1997
		US 5608647 A	04-03-1997
		US 5655516 A	12-08-1997
		US 5743252 A	28-04-1998
		US 5755218 A	26-05-1998
		US 5813397 A	29-09-1998
		US 5826570 A	27-10-1998
US 3929282 A	30-12-1975	CH 574578 A	15-04-1976
		CH 572181 A	30-01-1976
		DE 2403000 A	08-08-1974
		DE 2403132 A	08-08-1974
		FR 2216010 A	30-08-1974
		FR 2216499 A	26-11-1976
US 3402861 A	24-09-1968	NONE	
WO 9212750 A	06-08-1992	US 5322057 A	21-06-1994
		AU 1342092 A	27-08-1992
		CA 2099665 A	25-07-1992
		EP 0568648 A	10-11-1993
		JP 6505184 T	16-06-1994
US 5655523 A	12-08-1997	US 6012454 A	11-01-2000
		DE 69027319 D	11-07-1996
		DE 69027319 T	21-11-1996
		EP 0470154 A	12-02-1992
		AT 138814 T	15-06-1996
		AU 643435 B	18-11-1993
		AU 5539590 A	29-11-1990
		AU 644790 B	23-12-1993
		AU 5558890 A	29-11-1990
		CA 2050298 A	29-10-1990
		CA 2058764 A	29-10-1990
		DE 69027679 D	08-08-1996
		DE 69027679 T	14-11-1996
		DK 470154 T	21-10-1996
		DK 472598 T	29-07-1996
		EP 0472598 A	04-03-1992
		EP 0705614 A	10-04-1996
		ES 2087911 T	01-08-1996
		ES 2091825 T	16-11-1996
		WO 9013327 A	15-11-1990
		HK 1006546 A	05-03-1999
		JP 5501505 T	25-03-1993
		JP 4504671 T	20-08-1992
		KR 178798 B	01-04-1999
		NZ 233486 A	26-05-1995
		NZ 248275 A	26-05-1995
		WO 9013328 A	15-11-1990
		US 5619984 A	15-04-1997
		US 5740793 A	21-04-1998
US 4581942 A	15-04-1986	JP 60117131 A	24-06-1985
		DE 3476451 D	02-03-1989
		EP 0145384 A	19-06-1985

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inventor's Application No

PCT/EP 00/01446

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5873361	A	23-02-1999	FI	96579 B	15-04-1996
EP 536978	A	14-04-1993	AU	2631692 A	22-04-1993
			JP	5209827 A	20-08-1993
			US	5468961 A	21-11-1995

Claims

- 5 1. Metering valve for an aerosol container comprising

a valve body defining a metering chamber;

said metering chamber having an inlet and an outlet, said inlet permitting flow of aerosol from said container to the metering chamber and said outlet permitting

10 dispensing of aerosol from the metering chamber;

the inlet having an inlet valve reversibly actuatable from an open to a closed position; and

15 the outlet having an outlet valve reversibly actuatable from a dispensing to a non-dispensing position, wherein said outlet valve comprises an outlet valve seat and an outlet valve poppet in biasable contact therewith.
- 20 2. Metering valve according to claim 1, wherein said inlet valve comprises an inlet valve seat and an inlet valve poppet in biasable contact therewith.
3. Metering valve according to either of claims 1 or 2, wherein the inlet valve and the outlet valve are closed when the metering valve is at rest.
- 25 4. Metering valve according to any of claims 1 to 3, wherein the inlet valve and the outlet valve are independently operable.
- 30 5. Metering valve according to any of claims 1 to 4, wherein any valve poppet comprises an incompressible material and any valve seat comprises a compressible material.
- 35 6. Metering valve according to any of claims 1 to 4, wherein any valve poppet comprises a compressible material and any valve seat comprises an incompressible material.

7. Metering valve according to any of claims 1 to 6, additionally comprising an outlet valve mover for moving the outlet valve poppet out of contact with the outlet valve seat.
- 5 8. Metering valve according to any of claims 2 to 7, additionally comprising an inlet valve mover for moving the inlet valve poppet out of contact with the inlet valve seat.
- 10 9. Metering valve according to either of claims 7 or 8, wherein either or both of said inlet valve mover or said outlet valve mover is mechanically actuable.
- 15 10. Metering valve according to either of claims 7 or 8, wherein either or both of the inlet valve mover or the outlet valve mover is electrically actuable.
11. Metering valve according to claim 10, wherein either or both of the inlet valve mover or the outlet valve mover comprises a multi-component strip or wire which is deformable in response to electrical current flow.
- 20 12. Metering valve according to claim 11, wherein said multi-component strip or wire comprises multiple layers of different metals.
13. Metering valve according to claim 12, wherein the multi-component strip comprises a bimetallic strip.
- 25 14. Metering valve according to either of claims 11 or 12, wherein the multi component strip comprises at least one piezoelectric or piezoresistive material.
- 30 15. Metering valve according to claim 11, wherein said multi-component wire comprises a nickel-titanium alloy.
16. Metering valve according to either of claims 7 or 8, wherein either or both of the inlet valve mover or the outlet valve mover is magnetically actuable.

PCT
REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum) PG3671/ PCT

Box No. I	TITLE OF INVENTION Metering Valve	
Box No. II	APPLICANT	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below). Glaxo Group Limited Glaxo Wellcome House Berkeley Avenue Greenford, Middlesex UB6 0NN GB		<input type="checkbox"/> This person is also inventor. Telephone No. 0171 493 4060 Facsimile No. 0181 966 8838 Teleprinter No. 25456
State (i.e. country) of nationality: GB		State (i.e. country) of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box		
Box No. III	FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below). JONES, Anthony Patrick Glaxo Group Ltd. Park Road Ware, Herts. SG12 ODP GB		This person is: <input type="checkbox"/> applicant only <input checked="" type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)
State (i.e. country) of nationality: GB		State (i.e. country) of residence: GB
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input type="checkbox"/> all designated States except the United States of America <input checked="" type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box		
<input checked="" type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.		
Box No. IV	AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative		
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country). PIKE, Christopher Gerard Pike & Co., Hayes Loft, 68A Hayes Place Marlow, Buckinghamshire SL7 2BT, GB		Telephone No.: 01628-471869 Facsimile No.: 01628-471878 Teleprinter No.:
<input type="checkbox"/> Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.		

Form PCT/RO/101 (first sheet) (January 2000)

See Notes to the request form

Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS

If none of the following check-boxes is used, this sheet is not to be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

ANDERSON, Gregor, John McLennan
Glaxo Group Ltd.
Park Road
Ware, Herts.
SG12 ODP
GB

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

GB

State (i.e. country) of residence:

GB

This person is applicant for the purposes of:

☐

all designated States

☐

all designated States except the United States of America

☒

the United States of America only

☐

the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

RAND, Paul Kenneth
Glaxo Group Ltd.
Park Road
Ware, Herts.
SG12 ODP
GB

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant for the purposes of:

☐

all designated States

☐

all designated States except the United States of America

☐

the United States of America only

☐

the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant for the purposes of:

☐

all designated States

☐

all designated States except the United States of America

☐

the United States of America only

☐

the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant for the purposes of:

☐

all designated States

☐

all designated States except the United States of America

☐

the United States of America only

☐

the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No.V DESIGNATION OF STATES

The following designations are hereby under Rule 4.9(a) (mark the applicable check-boxes; one must be marked):

Regional Patent

- ☒ **AP ARIPO Patent:** GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ **EA Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ **OA OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|--|--|
| <input checked="" type="checkbox"/> AE United Arab Emirates | <input checked="" type="checkbox"/> LR Liberia |
| <input checked="" type="checkbox"/> AL Albania | <input checked="" type="checkbox"/> LS Lesotho |
| <input checked="" type="checkbox"/> AM Armenia | <input checked="" type="checkbox"/> LT Lithuania |
| <input checked="" type="checkbox"/> AT Austria | <input checked="" type="checkbox"/> LU Luxembourg |
| <input checked="" type="checkbox"/> AU Australia | <input checked="" type="checkbox"/> LV Latvia |
| <input checked="" type="checkbox"/> AZ Azerbaijan | <input checked="" type="checkbox"/> MA Morocco |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina | <input checked="" type="checkbox"/> MD Republic of Moldova |
| <input checked="" type="checkbox"/> BB Barbados | <input checked="" type="checkbox"/> MG Madagascar |
| <input checked="" type="checkbox"/> BG Bulgaria | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BR Brazil | <input checked="" type="checkbox"/> MN Mongolia |
| <input checked="" type="checkbox"/> BY Belarus | <input checked="" type="checkbox"/> MW Malawi |
| <input checked="" type="checkbox"/> CA Canada | <input checked="" type="checkbox"/> MX Mexico |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input checked="" type="checkbox"/> NO Norway |
| <input checked="" type="checkbox"/> CN China | <input checked="" type="checkbox"/> NZ New Zealand |
| <input checked="" type="checkbox"/> CR Costa Rica | <input checked="" type="checkbox"/> PL Poland |
| <input checked="" type="checkbox"/> CU Cuba | <input checked="" type="checkbox"/> PT Portugal |
| <input checked="" type="checkbox"/> CZ Czech Republic | <input checked="" type="checkbox"/> RO Romania |
| <input checked="" type="checkbox"/> DE Germany | <input checked="" type="checkbox"/> RU Russian Federation |
| <input checked="" type="checkbox"/> DK Denmark | <input checked="" type="checkbox"/> SD Sudan |
| <input checked="" type="checkbox"/> DM Dominica | <input checked="" type="checkbox"/> SE Sweden |
| <input checked="" type="checkbox"/> EE Estonia | <input checked="" type="checkbox"/> SG Singapore |
| <input checked="" type="checkbox"/> ES Spain | <input checked="" type="checkbox"/> SI Slovenia |
| <input checked="" type="checkbox"/> FI Finland | <input checked="" type="checkbox"/> SK Slovakia |
| <input checked="" type="checkbox"/> GB United Kingdom | <input checked="" type="checkbox"/> SL Sierra Leone |
| <input checked="" type="checkbox"/> GD Grenada | <input checked="" type="checkbox"/> TJ Tajikistan |
| <input checked="" type="checkbox"/> GE Georgia | <input checked="" type="checkbox"/> TM Turkmenistan |
| <input checked="" type="checkbox"/> GH Ghana | <input checked="" type="checkbox"/> TR Turkey |
| <input checked="" type="checkbox"/> GM Gambia | <input checked="" type="checkbox"/> TT Trinidad and Tobago |
| <input checked="" type="checkbox"/> HR Croatia | <input checked="" type="checkbox"/> TZ United Republic of Tanzania |
| <input checked="" type="checkbox"/> HU Hungary | <input checked="" type="checkbox"/> UA Ukraine |
| <input checked="" type="checkbox"/> ID Indonesia | <input checked="" type="checkbox"/> UG Uganda |
| <input checked="" type="checkbox"/> IL Israel | <input checked="" type="checkbox"/> US United States of America |
| <input checked="" type="checkbox"/> IN India | <input checked="" type="checkbox"/> UZ Uzbekistan |
| <input checked="" type="checkbox"/> IS Iceland | <input checked="" type="checkbox"/> VN Viet Nam |
| <input checked="" type="checkbox"/> JP Japan | <input checked="" type="checkbox"/> YU Yugoslavia |
| <input checked="" type="checkbox"/> KE Kenya | <input checked="" type="checkbox"/> ZA South Africa |
| <input checked="" type="checkbox"/> KG Kyrgyzstan | <input checked="" type="checkbox"/> ZW Zimbabwe |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | |
| <input checked="" type="checkbox"/> KR Republic of Korea | |
| <input checked="" type="checkbox"/> KZ Kazakhstan | |
| <input checked="" type="checkbox"/> LC Saint Lucia | |
| <input checked="" type="checkbox"/> LK Sri Lanka | |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

☐

☐

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box		
		Where earlier application is		
Filing Date of Earlier Application (day/month/year)	Number of earlier application	national application: country	regional application: * regional Office	international application: receiving Office
item (1) (12.03.99) 12 March 1999	9905568.3	GB		
item (2) (05.08.99) 5 August 1999	9918388.1	GB		

☐ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s):
 * Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that early application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA)
 (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):
 ISA/

Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):
 Date (day/month/year) Number Country (or regional office)

Box. VIII CHECK LIST: LANGUAGE OF FILING

This international application contains the following number of sheets:

request : 4

description (excluding

sequence listing part) : 24

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(21) International Application Number: PCT/EP00/01446 (22) International Filing Date: 23 February 2000 (23.02.00) (30) Priority Data: 9905568.3 12 March 1999 (12.03.99) GB 9918388.1 5 August 1999 (05.08.99) GB (71) Applicant (for all designated States except US): GLAXO GROUP LIMITED [GB/GB]; Glaxo Wellcome House, Berkeley Avenue, Greenford, Middlesex UB6 0NN (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): JONES, Anthony, Patrick [GB/GB]; Glaxo Group Ltd., Park Road, Ware, Herts SG12 0DP (GB). ANDERSON, Gregor, John, McLennan [GB/GB]; (GB). RAND, Paul, Kenneth [GB/GB]; Glaxo Group Ltd., Park Road, Ware, Herts. SG12 0DP (GB). (74) Agent: PIKE, Christopher, Gerard; Pike & Co., Hayes Loft, 68A Hayes Place, Marlow, Buckinghamshire SL7 2BT (GB).			(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>
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(57) Abstract There is provided a metering valve for an aerosol container comprising a valve body defining a metering chamber; the metering chamber having an inlet and an outlet, the inlet permitting flow of aerosol from said container to the metering chamber and the outlet permitting dispensing of aerosol from the metering chamber; the inlet having an inlet valve reversibly actuatable from an open to a closed position; and the outlet having an outlet valve reversibly actuatable from a dispensing to a non-dispensing position, wherein the outlet valve comprises an outlet valve seat and an outlet valve poppet in biasable contact therewith.			